

In the Claims

1. – 14. (Canceled)
15. (Currently amended) An antibody or antibody fragment that binds to a polypeptide comprising a sequence of amino acid residues as shown in SEQ ID NO:3; and
reduces or neutralizes the ~~pro-inflammatory~~ activity of either IL-20 (SEQ ID NO:8) or IL-22 (SEQ ID NO:6).
16. (Original) The antibody or antibody fragment according to claim 15, wherein the antibody or antibody fragment reduces the pro-inflammatory activity of both IL-20 (SEQ ID NO:8) and IL-22 (SEQ ID NO:6).
17. (Previously presented) The antibody or antibody fragment according to claim 15, wherein the antibody or antibody fragment is (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) an antibody fragment, or (e) a human monoclonal antibody.
18. (Original) The antibody or antibody fragment according to claim 15, wherein the antibody further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
19. (Original) The antibody of claim 17, wherein the antibody further comprises PEGylation.
20. (Previously presented) The antibody or antibody fragment according to claim 16, wherein the antibody or antibody fragment is (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) an antibody fragment, or (e) a human monoclonal antibody.

21. (Original) The antibody or antibody fragment according to claim 16, wherein the antibody further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
22. (Original) The antibody of claim 20, wherein the antibody further comprises PEGylation.
23. – 54. (Canceled)
55. (Currently amended) An antibody comprising a monoclonal antibody that specifically binds to an antigenic epitope of human IL-22RA (SEQ ID NO:3) ~~selected from the group consisting of:~~
 - (a) ~~an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 1 (Pro), to amino acid number 6 (Asp) of SEQ ID NO:3;~~
 - (b) ~~an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 26 (Ser), to amino acid number 32 (Pro);~~
 - (c) ~~an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 41 (Lys), to amino acid number 47 (Asp);~~
 - (d) ~~an epitope consisting of the amino acid sequence of SEQ ID NO:2 from amino acid number 49 (Val), to amino acid number 62 (Cys);~~
 - (e) ~~an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 41 (Lys) to amino acid number 62 (Cys);~~
 - (f) ~~an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 84 (Ala) to amino acid number 97 (Ser);~~
 - (g) ~~an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 103 (Thr) to amino acid number 108 (Asp);~~
 - (h) ~~an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 130 (Arg) to amino acid number 135 (His);~~
 - (i) ~~an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 164 (Gly) to amino acid number 166 (Lys);~~

- ~~(j) — an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 175 (Tyr), to amino acid number 179 (Glu);~~
 - ~~(k) — an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 193 (Lys) to amino acid number 196 (Ala);~~
 - ~~(l) — an epitope consisting of the amino acid sequence of SEQ ID NO:3 from amino acid number 203 (Lys) to amino acid number 209 (Thr); and~~
 - ~~(m) — an epitope consisting of the amino acid sequence of SEQ ID NO:3; and~~
 - ~~(n) — an epitope consisting of the amino acid sequence of SEQ ID NO:4; and~~
- wherein the antibody reduces or neutralizes the activity of either human IL-22 (SEQ ID NO:6) or IL-20 (SEQ ID NO:8).

- 56. (Original) The antibody of claim 55, wherein the antibody reduces or neutralizes the activity of both human IL-22 (SEQ ID NO:6) and IL-20 (SEQ ID NO:8).
- 57. (Original) The antibody of claim 55, wherein the antibody is selected from the group consisting of: (a) a murine monoclonal antibody, (b) a humanized antibody derived from (a), (c) an antibody fragment, and (d) a human monoclonal antibody.
- 58. (Original) The antibody of claim 57, wherein the antibody further comprises PEGylation.
- 59. (Original) The antibody of claim 56, wherein the antibody is selected from the group consisting of: (a) a murine monoclonal antibody, (b) a humanized antibody derived from (a), (c) an antibody fragment, and (d) a human monoclonal antibody.
- 60. (Original) The antibody of claim 59, wherein the antibody further comprises PEGylation.
- 61. – 73. (Canceled)

74. (New) An isolated monoclonal antibody that competes for binding to the extracellular domain of IL-22RA (SEQ ID NO:3 or SEQ ID NO:4) with an isolated monoclonal antibody selected from the group consisting of:
- (a) the antibody produced by the hybridoma of clone designation number R2.1.1G11.1 (ATCC Patent Deposit Designation [PTA-6035]);
 - (b) the antibody produced by the hybridoma of clone designation number R2.1.5F4.1 (ATCC Patent Deposit Designation [PTA-6024]);
 - (c) the antibody produced by the hybridoma of clone designation number R2.1.5H8.1 (ATCC Patent Deposit Designation [PTA-6025]);
 - (d) the antibody produced by the hybridoma of clone designation number R2.1.12G7.1 (ATCC Patent Deposit Designation [PTA-6036]);
 - (e) the antibody produced by the hybridoma of clone designation number R2.1.13C8.1 (ATCC Patent Deposit Designation PTA-5037);
 - (f) the antibody produced by the hybridoma of clone designation number R2.1.15E2.1 (ATCC Patent Deposit Designation [PTA-6038]);
 - (g) the antibody produced by the hybridoma of clone designation number R2.1.16C11.1 (ATCC Patent Deposit Designation [PTA-6039]);
 - (h) the antibody produced by the hybridoma of clone designation number R2.1.18C8.1 (ATCC Patent Deposit Deposit Designation [PTA-6048]);
and
 - (i) the antibody produced by the hybridoma of clone designation number R2.1.21G8.2 (ATCC Patent Deposit Deposit Designation [PTA-6111]).
75. (New) The isolated monoclonal antibody according to claim 74, wherein the isolated monoclonal antibody is selected from the group consisting of:
- (a) the antibody produced by the hybridoma of clone designation number R2.1.1G11.1 (ATCC Patent Deposit Deposit Designation [PTA-6035]);
 - (b) the antibody produced by the hybridoma of clone designation number R2.1.5F4.1 (ATCC Patent Deposit Designation [PTA-6024]);
 - (c) the antibody produced by the hybridoma of clone designation number R2.1.5H8.1 (ATCC Patent Deposit Designation [PTA-6025]);

- (d) the antibody produced by the hybridoma of clone designation number R2.1.12G7.1 (ATCC Patent Deposit Designation [PTA-6036]);
 - (e) the antibody produced by the hybridoma of clone designation number R2.1.13C8.1 (ATCC Patent Deposit Designation PTA-5037);
 - (f) the antibody produced by the hybridoma of clone designation number R2.1.15E2.1 (ATCC Patent Deposit Designation [PTA-6038]);
 - (g) the antibody produced by the hybridoma of clone designation number R2.1.16C11.1 (ATCC Patent Deposit Designation [PTA-6039]);
 - (h) the antibody produced by the hybridoma of clone designation number R2.1.18C8.1 (ATCC Patent Deposit Deposit Designation [PTA-6048]);
and
 - (i) the antibody produced by the hybridoma of clone designation number R2.1.21G8.2 (ATCC Patent Deposit Deposit Designation [PTA-6111]).
76. (New) The isolated monoclonal antibody according to claim 74, wherein the isolated monoclonal antibody is (a) a murine monoclonal antibody, (b) a humanized antibody derived from (a), (c) an antibody fragment, or (d) a human monoclonal antibody.
77. (New) The isolated monoclonal antibody according to claim 74, wherein the antibody further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
78. (New) The isolated monoclonal antibody according to claim 74, wherein the antibody further comprises PEGylation.
79. (New) A pharmaceutical composition comprising the isolated monoclonal antibody according to claim 74.

80. (New) A hybridoma selected from the group consisting of:
- (a) a hybridoma comprising clone designation number R2.1.1G11.1 (ATCC Patent Deposit Designation [PTA-6035]);
 - (b) a hybridoma comprising clone designation number R2.1.5F4.1 (ATCC Patent Deposit Designation [PTA-6024]);
 - (c) a hybridoma comprising clone designation number R2.1.5H8.1 (ATCC Patent Deposit Designation [PTA-6025]);
 - (d) a hybridoma comprising clone designation number R2.1.12G7.1 (ATCC Patent Deposit Designation [PTA-6036]);
 - (e) a hybridoma comprising clone designation number R2.1.13C8.1 (ATCC Patent Deposit Designation PTA-5037);
 - (f) a hybridoma comprising clone designation number R2.1.15E2.1 (ATCC Patent Deposit Designation [PTA-6038]);
 - (g) a hybridoma comprising clone designation number R2.1.16C11.1 (ATCC Patent Deposit Designation [PTA-6039]);
 - (h) a hybridoma comprising clone designation number R2.1.18C8.1 (ATCC Patent Deposit Designation [PTA-6048]); and
 - (i) a hybridoma comprising clone designation number R2.1.21G8.2 (ATCC Patent Deposit Designation [PTA-6111]).